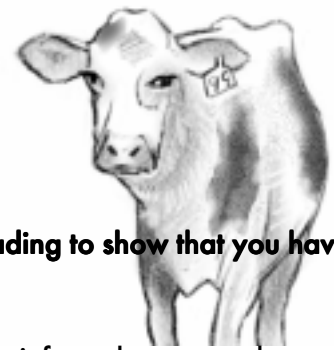


# Missouri's Dairy Industry



**Read the following passage about dairying. Use clues from your reading to show that you have learned some words that you may not have known before.**

Making milk available to you is more complicated than just delivering it from the cow to the grocery store. The dairy farm has the important job of producing the milk, but it is equally important that the milk is safe. Not only do dairy cows produce the milk we drink, they also provide us with a variety of dairy products that are all made from milk.

The farmer must decide what kind of cows would be best. The five major breeds of dairy cows are Holstein, Guernsey, Jersey, Ayrshire, and Brown Swiss. The Holstein (which is usually black and white) is the most popular. Different breeds produce milk with different amounts of fat (called butterfat). Butterfat is important because some or all of the fat is removed from the milk and is used to make dairy products such as butter. Holsteins produce large amounts of milk but the milk does not contain as much fat. Guernseys and Jerseys produce less milk, but the milk contains more fat.

The farmer keeps records on each animal to keep track of its health and production information. Most farmers have a veterinarian visit on a regular basis to check the health of the cows. The milking equipment and environment should be kept clean to avoid health problems. The farmer also has to be careful when giving medications to the cows because of the residue that might be left behind that can be given off in the milk. Medication labels will tell how long of a withdrawal period is required between the last dose of medication and the sale of milk from that cow.

Farmers can sell their milk on two markets. Grade A, or fluid milk, receives a higher price but costs more to produce because of rigid sanitation measures required by the state to keep the milk healthy for drinking purposes. This milk must be approved by an inspector before the farm can sell it. Manufacturing, or Grade C, milk is used for making dairy products such as cheese.

A cow will produce milk after having a baby calf and will continue to produce milk for about ten months. Milking for dairy purposes is done by machine. On some farms, about 100 cows can be milked in an hour by machines. Milking must be done two times every day. The milk travels from the machine into a refrigerated tank where it is kept until a refrigerated milk truck picks it up every other day. The dairy trucks are careful to pick up only good milk. They check the milk at each farm to make sure it is fresh before they put it in with other milk in the tank. They also run tests on samples of milk taken from each farm at the dairy to be sure that the milk is safe.

The truck takes the milk to the dairy for processing. The milk is spun to separate the cream from the remaining skimmed milk and the some of it is combined with the milk again in varying amounts to make products such as 1% milk, 2% milk, whole milk, half and half etc. The dairy makes the milk safe for us to drink by pasteurizing the milk at 175 degrees for 25 seconds. After this process, the milk is homogenized by passing it through a screen to break up the fat into small enough particles so that the fat will not rise to the top of the milk as cream. The milk is then put into containers and shipped to stores. The milk that arrives at the store was probably in a cow only 48 hours earlier!

The following words are found in the story. Use clues from your reading to help you choose the correct meaning of each word.

1. pasteurization
  - a. leaving cows out on pasture
  - b. heating milk to kill germs
  - c. separating milk and milk fat
2. withdrawal
  - a. time without medication use
  - b. milking a cow
  - c. putting milk into a tank
3. homogenization
  - a. heating milk
  - b. killing germs in milk
  - c. process of breaking up fat particles

4. skimmed milk
  - a. milk with extra fat
  - b. milk without fat
  - c. cream
5. Grade A Milk
  - a. high fat content milk
  - b. milk for drinking
  - c. milk used to make dairy products

The material in the article was adapted from that prepared by Mrs. Debra Garrett of the El Dorado Springs School District.

If you would like to read an interesting historical story about milk production and safety, ask your librarian to help you find, **"The Milkman's Boy"**, by Donald Hall. Walker and Company, 1997.

Use the charts  
on back page

## Interpreting Dairy Data

"Missouri Farm Facts" presents many interesting facts about dairy products. On the next page are some charts about dairy products produced in Missouri. **Use the charts** to answer the following questions about Missouri dairy production between the years of 1993 and 1997.

1. In what year from 1993 - 1997 was the most ice cream produced? \_\_\_\_\_
2. How many pounds of ice cream were produced that year?  
(Be sure to look at the units given in the chart) \_\_\_\_\_
3. Does the ice cream chart include soft or hard ice cream? \_\_\_\_\_
4. How much total cheese was produced in Missouri during 1997? \_\_\_\_\_
5. What was the largest total amount of milk produced? \_\_\_\_\_ What year was it? \_\_\_\_\_
6. The number of dairy cows has been (increasing or decreasing).
7. The average milk production per cow has been (increasing or decreasing).

